Indiana Department of Education

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March 29, 2004

To: Technology Education Teachers
From: Mike Fitzgerald
Subject: Technology Education Actions/Contexts Model, Page 1 of 2

TECHNOLOGY EDUCATION
(511 IAC 6-7-6, 511 IAC 6.1-5.1-9 AND 511 IAC 6.1-5-3.5)

INTRODUCTION

Technology Education is a body of knowledge and an area of study focusing on human endeavors in creating and using tools, techniques, resources, and systems to manage the man-made and natural environments. Students with technological knowledge understand how the human-built world is designed and created and how people can use it to extend their potential.
The Technology Education curriculum is designed to help students understand and to participate in the technological society surrounding them.

Curriculum and classroom activities designed for Technology Education provide the knowledge and problem solving skills needed by people in their three major areas of living. A person who has completed a Technology Education program should be able to participate as an **active citizen** through understanding and expressing positions on technological issues such as nuclear power generation, solid waste disposal, and natural resource management. In addition, a person should be able to make wise **consumer choices** including selecting appropriate technology, using it correctly, and disposing of it properly after it has served its purpose. Finally, Technology Education helps people make informed **career choices** by allowing students to participate in a wide array of technological activities which all have career ramifications. Technology Education in Indiana is described as:

An action-based program for all students to learn how to develop, produce, use, and assess the impacts of products and services that extend the human potential to improve and control the natural and human-made environment.

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The fundamental objectives for this curriculum area are designed so that each student who participates in the Technology Education program will acquire an understanding of technology as a system in the global context by learning how to:

- Develop and produce technological products, structures, or services to meet human demands and wants.
- Use tools, machines, materials, and energy to produce products, structures, and services.
- Select appropriate technology to solve problems and meet opportunities.
- Appropriately use technology to extend human potential to improve and control our environment.
- Assess the impact of technology on individuals, society, and the environment.
- Use appropriate personal and interpersonal skills to participate in a technological society.

To reach these goals, the program is based on a set of actions that are universal for all technologies. The curriculum structure is comprised of four major sequential stages (introduction, systems, processes, and application) and deals with two key aspects:

- The actions used in developing, producing, using, and assessing technology.
- The contexts where technology is developed and used.

The following two-dimensional matrix illustrates this approach.

Technological Actions/Contexts Model

TECHNOLOGICAL ACTIONS	Communication	Construction	Manufacturing	Transportation
Developing products and systems				
Producing products and services				
Using products and services				
Assessing products and systems				

TECHNOLOGICAL CONTEXTS

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To: Technology Education/Project Lead The Way Teachers
From: Mike Fitzgerald
Subject: Principals of Engineering, Project Lead The Way

NOTE: The following new course title was approved by the State Board of Education in August 2001, to enable high schools to participate in the national Project Lead the Way (PLTW) program. Schools wishing to use the course title listed below must enter into an agreement with PLTW. Information regarding this pre-engineering program can be obtained by viewing the web site at <www.pltw.org> or contacting the Department of Education at 317/232-9162.

NEW TECHNOLOGY EDUCATION COURSE TITLES
January, 2002

PRINCIPLES OF ENGINEERING
(Project Lead The Way) 36 weeks

DOE #4814

Principles of Engineering is a broad-based survey course designed to help students understand the field of engineering and engineering technology and its career possibilities. Students will develop engineering problem solving skills that are involved in postsecondary education programs and engineering careers. They will also learn how engineers address concerns about the social and political consequences of technological change.

Only those schools having a signed agreement with the national Project Lead the Way organization can use this course title. Schools involved in Project Lead the Way should use this course title in lieu of the Technology Education course "Fundamentals of Engineering."

- Suggested Grade Level: 9-10
- Recommended Prerequisites: Technology, Introduction to Engineering Design (Project Lead the Way), and Digital Electronics (Project Lead the Way)
- A two credit/two semester course.
- An Academic Honors Diploma elective or a Core 40 directed elective as part of a technical career area.
- A college preparation course as part of a pre-engineering program. Students are also expected to complete a college preparatory sequence of courses in mathematics.
- Competencies (content standards) defined by Project Lead the Way, Inc.
- This course is included as a component of the Engineering, Science, and Technologies career cluster and may also be included as a component of other career clusters.